Amendment to the Claims:

This listing of claims replaces all prior versions, and listings, of claims in the application:

1. (Cancelled)

2. (Currently Amended) A pump as in claim ~~1,~~ 21, wherein said housing and cathode structure is formed of titanium.

3. (Currently Amended) A pump as in claim ~~1,~~ 21, wherein said magnet is formed in a substantially C shape.

4. (Currently Amended) A pump as in claim 3, wherein said magnet is formed of one of ~~hiperco 50~~ vanadium permendur magnetic material.

5-8. (Cancelled)

9. (Currently Amended) A pump as in claim ~~1,~~ 21, further comprising
a voltage source, which applies a voltage potential between said anode and said housing.

10. (Cancelled)

11. (Currently Amended) An ion pump as in claim ~~10,~~ 21, wherein said magnetic field extends along a direction that is coaxial with said axis of said anode.

12. (Currently Amended) An ion pump as in claim ~~10,~~ 21, further comprising a GCMS a system receiving its vacumn from said ion pump.

13. (Currently Amended) An ion pump as in claim ~~10,~~ 21, wherein said magnet is formed of a high energy product value magnet.

14-20. (Cancelled)

21. (New) An ion pump comprising:

a plurality of anodes, which are substantially cylindrical, and which have first and second open ends;

a combined housing and cathode structure, formed of a cathode material, forming a vacuum tight seal, and having a connection for a vessel to be evacuated, said housing and cathode structure forming a plurality of surrounding surfaces that surround said anodes on all sides of the anodes, and having a plurality of extending surfaces, extending into the vacuum tight sealed area and into insides of said anodes, from said

surrounding surfaces;

a magnet, surrounding at least a portion of said cathode and housing structure; and

a connection for a voltage source of a type which allows pumping by the ion pump.

22. (New) An ion pump as in claim 21, wherein both said housing, and said plurality of extending surfaces, are both formed of titanium.